

**CLAIMS**

What is claimed is:

1. A process for fabricating a deflectable optical MEMS structure having a dielectric coating, the process comprising:

5       forming a device layer;  
      depositing a dielectric optical coating over the device layer;  
      depositing a mask layer over the device layer;  
      patterning the mask layer;  
      transferring a pattern of the mask layer into the dielectric coating; and  
10       removing at least part of a sacrificial layer to release the device layer.

2. A process as claimed in claim 1, wherein the step of removing the sacrificial layer is performed after the patterning of the dielectric coating.

3. A process as claimed in claim 1, wherein the step of removing the sacrificial layer is performed, at least in part, before the patterning of the dielectric coating.

15       4. A process as claimed in claim 1, wherein the step of forming the device layer comprises depositing the device layer on the sacrificial layer.

5. A process as claimed in claim 1, wherein the step of forming the device layer comprises bonding the device layer to the sacrificial layer.

20       6. A process as claimed in claim 1, wherein the step of depositing the mask layer comprises depositing a photoresist material.

7. A process as claimed in claim 1, wherein the step of depositing the mask layer comprises depositing a metal layer.

8. A process as claimed in claim 1, wherein the step of patterning the mask layer comprises removing a portion mask layer in the optical port region.

9. A process as claimed in claim 1, wherein the step of patterning the mask layer comprises removing portions of the mask layer outside of the optical port region.

5 10. A process as claimed in claim 1, wherein the step of transferring the pattern of the mask layer into the dielectric coating comprises removing the mask layer and portions of the dielectric coating on the mask layer.

10 11. A process as claimed in claim 1, wherein the step of transferring the pattern of the mask layer into the dielectric coating comprises etching portions of the dielectric coating exposed by the mask layer.

12. A process as claimed in claim 1, further comprising patterning tethers into the device layer.

15 13. A process as claimed in claim 1, wherein the step of removing at least part of the sacrificial layer is performed after the step of depositing the dielectric optical coating; the process further comprising covering the dielectric optical coating with a protecting layer during removal of the sacrificial layer.

14. A process as claimed in claim 1, further comprising installing the membrane at one end of a laser cavity.

20 15. A process as claimed in claim 1, further comprising installing the membrane opposite a stationary reflector to form a tunable Fabry-Perot filter.